MULTI-MODE VCO

ABSTRACT OF THE DISCLOSURE

A voltage controlled oscillator (VCO) is constructed using a series ring connection of an odd number K of logic inverters where K is greater than three. Each sequence of three of the logic inverters has voltage controlled feed-forward conduction circuit coupled in parallel. Each of the feed-forward circuits has the same phase between its input and output as the path it parallels. The control voltage of the feed-forward circuits operates to decrease the path delay of the logic inverters when they are conducting. Selectable inverters are connected in parallel with each logic inverter using a P and an N channel field effect transistor (FET). The N channel FET is controlled with a Mode signal and the P channel FET is controlled by a Modeb signal which is generated by inverting the Mode signal. The Mode and Modeb signals control the connection of the selectable inverters are in parallel with the logic inverters thus increasing the drive capability of the parallel combination of inverters. This reduces the delay of the circuit elements and generates a second higher frequency range over which the VCO operates. When the selectable inverters are disconnected, the VCO has a normal lower frequency range of operation.

::ODMA\PCDOCS\AUSTIN_1\169292\1
1097:7047/P447US